## REMARKS

In the Office Action, the Examiner rejected claims 1-16 and 18-21, and indicated that claim 17 includes allowable subject matter. Applicants thank the Examiner for indicating the allowable subject matter of claim 17. By the present Response, Applicants amend claims 1, 5, 10, 14, and 19 to more clearly indicate certain features of the claimed embodiments. These amendments do not add any new matter. Upon entry of these amendments, claims 1-21 will remain pending in the present application and are believed to be in condition for allowance. In view of the foregoing amendments and the following remarks, Applicants respectfully request reconsideration and allowance of all pending claims.

### Claim Rejection under 35 U.S.C. § 101

The Examiner rejected claims 1-9 under 35 U.S.C. § 101, because the claimed invention is directed to non-statutory subject matter. In particular, the Examiner stated the following:

> Claims 1-8 claim "a system" of software per se which has no physical parts. Appropriate action is required.
>
> Office Action, page 2

Computer programs have been directly held by the Federal Circuit to be patentable under Section 101 when recited to be stored in a tangible medium. *See In re Beauregard,* 53 F.3d 1583 (Fed Cir. 1995). Indeed, the Commissioner of Patents is quoted in the *Beauregard* case as stating that, "[C]omputer programs embodied in a tangible medium…are patentable subject matter under 35 U.S.C. §101." *Id.*

While Applicants do not necessarily agree with the Examiner's assertions, Applicants have amended independent claims 1 and 5 to clearly comply with 35 U.S.C. § 101. Specifically, claims 1 and 5 have been amended to recite "a processor" and "a memory." Further, claims 1 and 5 have been amended to clearly indicated that certain recited features are stored on the memory, which is a tangible computer readable medium in accordance with the precedent relating to 35 U.S.C. § 101.

In view of the present amendments to claims 1 and 5, and the arguments set forth above. Applicants respectfully request that the Examiner withdraw the rejection of claims 1 and 5, and the claims depending therefrom under 35 U.S.C. § 101.

**Claim Rejections Under 35 U.S.C. § 102**

In the Office Action, the Examiner rejected claims 1-16 and 18-21 under 35 U.S.C. § 102(b) as being anticipated by Downing et al. (U.S. Patent No. 6,289,335) (hereafter referred to as "the Downing reference"). Applicants respectfully traverse these rejections.

***Legal Precedent***

Anticipation under 35 U.S.C. § 102 can be found only if a single reference shows exactly what is claimed. *Titanium Metals Corp. v. Banner*, 778 F.2d 775, 227 U.S.P.Q. 773 (Fed. Cir. 1985). For a prior art reference to anticipate under 35 U.S.C. § 102, every element of the claimed invention must be identically shown in a single reference. *In re Bond*, 910 F.2d 831, 15 U.S.P.Q.2d 1566 (Fed. Cir. 1990). That is, to maintain a proper rejection under 35 U.S.C. § 102, a single reference must teach each and every element or step of the rejected claim. *Atlas Powder v. E.I. du Pont*, 750 F.2d 1569 (Fed. Cir. 1984). Indeed, the cited reference must not only disclose all of the recited features but must also disclose the part-to-part relationships between these features. *See Lindermann Maschinenfabrik GMBH v. American Hoist & Derrick*, 221 U.S.P.Q. 481, 486 (Fed. Cir.1984). Accordingly, the Applicants need only point to a single element or claimed relationship not found in the cited reference to demonstrate that the cited reference fails to anticipate the claimed subject matter.

Embodiments of the present disclosure are directed to systems and methods for performing conflict resolution when refreshing a materialized view. Application, Abstract. A materialized view may include a subset of elements of a table in a database, wherein the materialized view may be stored as a separate table within the database. *Id.*, paragraph

[0002]. By utilizing the materialized view, queries may be run against the materialized view without incurring processing time penalties for reassembling the information contained in the materialized view each time a query that may be satisfied by the materialized view is performed. *Id.* Present embodiments may utilize a deferred refresh policy to update the materialized view after underlying data in the table corresponding to the materialized view has changed. *Id.*, paragraphs [0003]-[0004]. Accordingly, updates may be collected in a log and applied periodically. *Id.*

Present embodiments promote effective range logging by addressing correctness issues related to conflicts between sets of range records and conflicts between single-row records and range records. Specifically, to address such issues, present embodiments may include features or steps that utilize log files storing log entries with timestamps for updating materialized views. Application, paragraph [0021]. The timestamp associated with each log entry indicates when the operation to the table occurred. *Id.*, paragraph [0021]. Thus, a refresh manager in accordance with present embodiments may resolve range logging conflicts by comparing the timestamps associated with each range and/or single-row. *Id.*, paragraphs [0039]-[0062]. For example, if two ranges overlap, the conflict resolution is in favor of the younger range (i.e., the one with the greater time stamp). *Id.*, [0045]. In other words, the range that is associated with a more recent operation to the base table remains in tact, while the range associated with an earlier operation to the base table must be changed (e.g., deleted, split, or resized). *Id.*

Accordingly, the presently amended claims indicate that the time stamps associated with the respective ranged and/or single-row entries are indicative of when a corresponding operation occurred to the table, thus facilitating appropriate conflict resolution based on when the changes occurred to the table. For example, the recitations of claim 1 include features that are generally representative of features recited in each of the independent claims. Specifically, amended independent claim 1 recites, *inter alia*, "A system, comprising … a logging mechanism … configured to maintain a refresh log, the refresh log

containing a first range and a second range that at least partially overlap, the first range and the second range each having a timestamp associated therewith, wherein the time stamp associated with each of the first range and second range respectively indicates when an operation corresponding to the first range and the second range occurred to the table; and a refresh manager … configured to resolve conflicts between the first range and the second range … by selecting portions of the first range and the second range that have the more recent timestamp." (Emphasis added).

In contrast, the Downing reference fails to disclose timestamps associated with ranges and/or single-row entries of a refresh long, wherein the timestamps are indicative of when operations occurred to the table. Rather, the Downing reference merely discloses master logs that contain a field for a refresh timestamp. This refresh timestamp has a default value that is set to a distant time in the future, which is in no way indicative of anything related to any operation in an underlying table. For example, with regard to such timestamps, the Downing reference states the following:

> [E]ach entry in the master logs contains a field for a refresh timestamp, TIME$$. When the entry is first added to a master log, a default value for the timestamp is placed in the TIME$$ field. When the entry is first used in a refresh operation, the default value is changed to reflect the time of the refresh operation. … The default value is preferably a distant time in the future, such as Jan. 1, 4000 A.D.
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> Downing et al., col. 8, lines 55-63 (emphasis added).

As is clearly indicated by the quoted portion of the Downing reference set forth above, there is no distinction between the default timestamps. Indeed, they are each set to the same default future value, and the default values certainly do not correspond to anything related to an operation in an underlying table. Further, the default is only changed to reflect the time of a refresh operation. Accordingly, the Downing reference certainly does not disclose anything related to performing conflict resolution when refreshing a materialized view by selecting a particular range or single-row entry based on which one has a more

recent timestamp associated therewith. Indeed, the Downing reference does not appear to make any distinction between the timestamps until the materialized view has already been refreshed. In other words, the Downing reference clearly is not refreshing the materialized view based on a comparison of the timestamps and selecting the associated range and/or single-row entry based on the timestamp that is indicative of the most recent table operation.

With regard to claims 2, 3, 6, 7, 8, 11, 12, 15, 16, 17, 20, and 21, Applicants assert that the Downing reference fails to disclose a refresh log comprising an epoch identifier. Indeed, a search of the Downing reference indicates that the term "epoch" is never used. Further, Applicants assert that a timestamp is clearly not equivalent to an epoch identifier as described by the present application. Applicants respectfully remind the Examiner that the Examiner must interpret the claims consistently with the application. *In re Hyatt*, 211 F.3d 1367, 1372, 54 U.S.P.Q.2d 1664, 1667 (Fed. Cir. 2000). The specification clearly indicates a distinction between the terms "epoch" and "timestamp" by using the terms to refer to different features.

In view of the arguments set forth above, Applicants assert that the Downing reference fails to disclose all of the recited features of independent claims 1, 5, 10, 14, and 19. Further, Applicants assert that the Downing reference fails to disclose certain features of the claims depending from each of claims 1, 5, 10, 14, and 19. Accordingly, Applicants request that the Examiner withdraw the rejection of claims 1, 5, 10, 14, and 19, and the claims depending therefrom and provide an indication of allowance.

**Allowable Subject Matter**

The Examiner objected to claim 17 as being dependent upon a rejected base claim. Again, Applicants thank the Examiner for indicating the allowable subject matter of dependent claim 17. Applicants believe that the amendment and arguments set forth above

will place all of the pending claims in condition for allowance. Accordingly, Applicants do not presently amend dependent claim 17 to place it in independent form.

**Payment of Fees and General Authorization for Extensions of Time**

No fees are believed to be due at this time. If any fees any fees, including fees for extensions of time and other reasons, are deemed necessary to advance prosecution of the present application, at this or any other time, Applicants hereby authorize the Commissioner to charge such requisite fees to Deposit Account No. 06-1315; Order No. NUHP:0074/FLE (200308559-1). In accordance with 37 C.F.R. § 1.136, Applicants hereby provide a general authorization to treat this and any future reply requiring an extension of time as incorporating a request thereof.

**Conclusion**

In view of the remarks and amendments set forth above, Applicants respectfully request allowance of the pending claims. If the Examiner believes that a telephonic interview will help speed this application toward issuance, the Examiner is invited to contact the undersigned at the telephone number listed below.

Respectfully submitted,

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